

Method of Manufacturing Silicon Carbide Film

Abstract of the Disclosure

[0140] A method for forming a silicon carbide film on a semiconductor substrate by plasma CVD includes: introducing a raw material gas containing silicon, carbon, and hydrogen, an inert gas, and optionally an hydrogen source gas, into a reaction chamber at a predetermined mixing formulation of the raw material gas to the inert gas; applying radio-frequency power at the mixing formulation, thereby forming a curable silicon carbide film having a dielectric constant of about 4.0 or higher; and continuously applying radio-frequency power at a mixing formulation reducing the raw material gas and the hydrogen source gas if any, thereby curing the silicon carbide film to give a dielectric constant and a leakage current lower than those of the curable silicon carbide film.